What is claimed is:

1. A prosthetic graft for placement by a single delivery catheter at the bifurcation of a first vessel into second and third vessels within the vasculature of a patient comprising:

a first graft conduit having first and second ends and first and second stents, the first stent adapted to secure the first end of the first graft conduit within the lumen of the first vessel, the second stent adapted to secure the second end of the first graft conduit within the lumen of the second vessel; and

a second graft conduit attached in fluid communication with the first graft conduit, the second graft conduit having a third stent adapted to secure it within the lumen of the third vessel, the first and second graft conduits being sized and configured to be contained within and delivered by the single delivery catheter.

2. The prosthetic graft of claim 1 wherein the first graft conduit forms a first lumen and the first and second stents are contained within the first lumen and wherein the second graft conduit forms a second lumen and wherein the third stent is within the second lumen.

3. The prosthetic graft of claim 1 wherein the cross-sectional area of the first end of the first graft conduit is greater than the cross-sectional area of the second end of the first graft conduit.

4. The prosthetic graft of claim 1 wherein the first and second graft conduits are configured to expand from a first delivery configuration to a second deployed configuration and wherein the cross-sectional area of the first end of the first graft conduit is at least as great as the cross-sectional area of the

prosthetic graft at any localized point along a longitudinal axis of the first graft conduit when in the delivery configuration.

5. A method for placing a prosthetic graft in a vessel of a patient's vascular system, the prosthetic graft having a first tubular graft component and a second tubular graft component in fluid communication with the first tubular graft component, the method comprising:

providing a delivery catheter containing the prosthetic graft in a first delivery configuration, the catheter having an angular control element for adjustably controlling the angle between the first and second tubular graft components;

advancing the catheter through the vessel to a desired location;

manipulating the angular control element to select a desired angle between the first and second tubular graft components; and

deploying the prosthetic graft in the vessel in a second expanded configuration.

6. The method of claim 5 wherein the angular control element of the catheter includes a wire with a pre-formed angle and wherein the step of manipulating the angular control element to select a desired angle includes advancing or retracting the wire.

7. The method of claim 5 wherein the first tubular graft component includes a first stent attached thereto and the second tubular graft component includes a second stent attached thereto, the method further comprising securing the first and second tubular graft components within the vessel by radially expanding the first and second stents.

8. A prosthetic graft for placement by a single delivery catheter at the bifurcation of a first vessel into second and third vessels within the vasculature of a patient comprising:

a first graft conduit having first and second ends and including a tubular graft component defining a lumen and at least one stent located within the lumen and attached to the graft component, the stent adapted to secure the first end of the first graft conduit within the lumen of the first vessel and the second end of the first graft conduit within the lumen of the second vessel; and

a second graft conduit attached in fluid communication with the first graft conduit, the second graft conduit including a tubular graft component defining a lumen and a stent located within the lumen and attached to the graft component and adapted to secure the second graft component within the lumen of the third vessel, the first and second graft conduits being sized and configured to be contained within and delivered by the single delivery catheter.

9. A prosthetic graft for placement by a single delivery catheter at the bifurcation of a first vessel into second and third vessels within the vasculature of a patient comprising:

a first leg having first and second leg segments, the first leg segment adapted to be deployed in the lumen of the first vessel, the second leg segment adapted to be deployed in the lumen of the second vessel; and

a second leg adapted to be deployed in the lumen of the third vessel, whereby the first and second segments of the first leg and the second leg are adapted to be independently deployable within the lumens of the first, second, and third vessels, the first and second legs

being sized and configured to be contained within and delivered by the single delivery catheter.

10. The prosthetic graft of claim 9 wherein the first leg includes a graft component and at least one stent attached to the graft component and wherein the second leg includes a graft component and a stent attached to the second leg graft component.

11. A method of placing a prosthetic graft at the bifurcation of the common iliac artery into the external and internal iliac arteries, the prosthetic graft having a first graft conduit with first and second ends and a second graft conduit attached in fluid communication with the first graft conduit, the method comprising:

providing a delivery catheter containing the prosthetic graft in a first delivery configuration;

introducing the delivery catheter into a femoral artery on the same side as the common iliac artery bifurcation;

advancing the delivery catheter to the common iliac artery bifurcation; and

manipulating the delivery catheter to deploy the prosthetic graft in a second expanded configuration such that the first end of the first graft conduit is secured within the lumen of the common iliac artery, the second end of the first graft conduit is secured within the lumen of the external iliac artery and the second graft conduit is secured within the lumen of the internal iliac artery.

12. The method of claim 11 wherein the delivery catheter includes an angular control element for adjustably controlling the angle between the first and second graft conduits and wherein the method further includes

manipulating the angular control element to select a desired angle between the first and second graft conduits.

13. The method of claim 11 wherein the first graft conduit includes a first stent and the second graft conduit includes a second stent, the first and second stents adapted to expand from a first delivery configuration to a second deployed configuration, the method further including securing the first end of the first graft conduit within the lumen of the common iliac artery by expanding at least a portion of the first stent to its deployed configuration and wherein the second end of the first graft conduit is secured within the lumen of the external iliac artery by expanding at least a portion of the first stent to its deployed configuration and wherein the second graft conduit is secured within the lumen of the internal iliac artery by expanding the second stent to its deployed configuration.

14. A method for repairing an abdominal aneurysm in an aorta which branches into two iliac arteries using a graft system having a first leg which includes first and second ends and a first bifurcated prosthetic graft having a first tubular graft component with first and second ends and a second tubular graft component in fluid communication with the first tubular graft component, the method comprising:

providing a delivery system including a first guide wire;

advancing the first guide wire through a first iliac artery to a desired location in the aorta above the aneurysm;

delivering the first leg over the first guide wire so that the first end of the first leg is above the aneurysm on one side thereof and the second and is on the other side of the aneurysm, the first leg extending across the aneurysm;

delivering the first bifurcated prosthetic graft over the first guide wire so that the second tubular graft component is positioned in the internal iliac artery, the first end of the first tubular graft component is positioned in the common iliac artery and the second end of the first graft component is positioned in the external iliac artery; and

securing the second end of the first leg to the first end of the first tubular graft component.

15. The method of claim 14 wherein the first leg includes an aortic stent attached to the first end of the first leg and an iliac stent attached to the second end of the first leg and wherein the first prosthetic graft includes at least one stent attached to the first tubular graft component and a stent attached to the second tubular graft component and wherein the method further comprises securing the first end of the first leg in the aorta by deploying the aortic stent, securing the second end by deploying the iliac stent and securing the first and second ends of the first tubular graft component by deploying the at least one stent and securing the second tubular graft component by securing the stent attached thereto.

16. The method of claim 14 wherein the first leg is delivered over the first guide wire prior to delivery of the first bifurcated prosthetic graft.

17. The method of claim 14 wherein the first bifurcated prosthetic graft is delivered over the first guide wire prior to delivery of the first leg.

18. The method of claim 14 further including providing a first delivery catheter for delivering the first leg and providing a second delivery catheter for delivering the first bifurcated prosthetic graft.

19. The method of claim 14 wherein the graft system includes a second leg which includes first and second ends and a second bifurcated prosthetic graft having a first tubular graft component with first and second ends and a second tubular graft component in fluid communication with the first tubular graft component and wherein the method further includes:

providing a delivery system including a second guide wire;

advancing the second guide wire through the second iliac artery to a desired location in the aorta above the aneurysm;

delivering the second leg over the second guide wire so that the first end of the second leg is above the aneurysm and on one side thereof and the second end of the second leg is on the other side of the aneurysm, the second leg extending across the aneurysm;

delivering the second bifurcated prosthetic graft over the second guide wire so that the second tubular graft component is positioned in the second internal iliac artery, the first end of the first tubular graft component is positioned in the second common iliac artery and the second graft component is positioned in the second external iliac artery; and

securing the second end of the second leg to the first end of the first tubular graft component of the second prosthetic graft.

20. A method for repairing an abdominal aneurysm in an aorta which branches into two iliac arteries using a graft system having a first leg which includes first and second ends and a first bifurcated prosthetic graft having a first tubular graft component with first and second ends and a second tubular graft component in fluid communication with the first tubular graft component, the method comprising:

advancing the first leg through a first iliac artery into the aorta so that the first end of the first leg is above the aneurysm on one side

thereof and the second end is on the other side of the aneurysm, the first leg extending across the aneurysm;

after the first leg has been advanced, advancing the first bifurcated prosthetic graft through the same iliac artery so that the second tubular graft component is positioned in the internal iliac artery, the first end of the first tubular graft component is positioned in the common iliac artery and the second end of the first graft component is positioned in the external iliac artery; and

securing the second end of the first leg to the first end of the first tubular graft component.

21. The method of claim 21 wherein the graft system includes a second leg having first and second ends and a second bifurcated prosthetic graft having a first tubular graft component with first and second ends and a second tubular graft component in fluid communication with the first tubular graft component, the method further comprising:

advancing the second leg through the second iliac artery into the aorta so that the first end of the second leg is above the aneurysm on one side thereof and the second end of the second leg is on the other side of the aneurysm, the second leg extending across the aneurysm; and

after the second leg has been advanced, advancing the second bifurcated prosthetic graft through the same iliac artery as the second leg so that the second tubular graft component of the second bifurcated prosthetic graft is positioned in the second internal iliac artery, the first end of the first tubular graft component is positioned in the second common iliac artery and the second end of the first graft component is positioned in the second external iliac artery; and

securing the second end of the second leg to the first end of the first tubular graft component of the second bifurcated prosthetic graft.

22. A graft system for repairing an abdominal aneurysm in an aorta which branches into two iliac arteries comprising:

a first leg having first and second ends, the first end adapted to be secured in the aorta on one side of the aneurysm and the second end adapted to be secured on the other side of the aneurysm;

a first bifurcated prosthetic graft having a first tubular graft component with first and second ends and a second tubular graft component attached in fluid communication with the first tubular graft component, the first end of the first tubular graft component adapted to be secured in the common iliac artery, the second end of the first tubular graft component adapted to be secured in the external iliac artery and the second tubular graft component adapted to be secured in the internal iliac artery;

a first guide wire sized to fit through a first iliac artery and through the aorta to a location above the aneurysm;

a first delivery catheter configured to advance and deliver the first leg across the first guide wire; and

a second delivery catheter configured to advance and deliver the first prosthetic graft across the first guide wire.

23. The graft system of claim 22 wherein the first leg includes an aortic stent attached to the first end and an iliac stent attached to the second end and wherein the first bifurcated prosthetic graft has at least one stent attached to the first tubular graft component and a stent attached to the second tubular graft component.

24. The graft system of claim 22 further including:

a second leg having first and second ends, the first end adapted to be secured in the aorta on one side of the aneurysm and the second end adapted to be secured on the other side of the aneurysm;

a second bifurcated prosthetic graft having a first tubular graft component with first and second ends and a second tubular graft component attached in fluid communication with the first tubular graft component, the first end of the first tubular graft component adapted to be secured in the common iliac artery, the second end of the first tubular graft component adapted to be secured in the external iliac artery and the second tubular graft component adapted to be secured in the internal iliac artery;

a second guide wire sized to fit through the second iliac artery and through the aorta to a location above the aneurysm;

a third delivery catheter configured to advance and deliver the second leg across the second guide wire; and

a fourth delivery catheter configured to advance and deliver the second prosthetic graft across the second guide wire.